

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A control device for operation by a user for controlling a display of a computer system for use with a video game, the control device comprising:

a housing having a shape adapted to be handled by a user of a video game;

a coordinate control unit including a motion sensor included within said housing, said housing being adapted to be handled by the user for generating input information related to a vertical and a horizontal tilt of the control device;

a game play control unit included within said housing adapted to be handled by the user for generating game play input information; and

a controller adapted to process the input information from the coordinate control unit to provide to the computer system point of view information of the user in a video game virtual environment, and adapted to process said input information from the game play control unit to provide to the computer system game play information representative of at least changes in latitudinal and longitudinal position of the user in the video game virtual environment, thereby creating a unified representation of changes of the point of view of the user within the video game virtual environment, which unified representation encompasses both horizontal and vertical changes of the users point of view within the video game virtual environment in response to handling by the user of the control device while not within the video game virtual environment, as well as latitudinal and longitudinal changes of the user's position within the point of view of the video game virtual environment, in response to handling by the user of the game play control unit while not within the video game virtual environment .

2. (Previously amended) The control device of claim 1, wherein the housing of said control device has a shape substantially similar to a firearm comprising:

a central body,

a handgrip extending downward from a rear section of the central body, and

a barrel extending longitudinally forward from the central body.

3. (Original) The control device of claim 2, wherein the coordinate control unit further comprises:

a y-axis sensor adapted to input information regarding a tilt of the barrel of the control device in a vertical direction; and

an x-axis sensor adapted to input information regarding a tilt of the barrel of the control device in a horizontal direction.

4. (Original) The control device of claim 3, wherein the y-axis sensor further comprises:

a horizontal shaft attached to a side of the barrel that rotates as the barrel is tilted upward and downward;

a first optical disk attached to the horizontal shaft such that the optical disk rotates with the horizontal shaft; and

at least one optical encoder adapted to correlate rotation of the optical disk to vertical tilt of the barrel to provide information indicating a desired vertical point of view of a user in the video game.

5. (Original) The control device of claim 3, wherein the x-axis sensor further comprises:

a vertical shaft connected to the y-axis sensor such that the vertical shaft rotates as the barrel is tilted left and right;

a second optical encoder disk attached to the vertical shaft such that the second optical disk rotates with the vertical shaft; and

at least one second optical encoder adapted to correlate the rotation of the second optical disk to a horizontal tilt of the barrel to provide information indicating a desired horizontal point of view of a user in the video game.

6. (Previously amended) The control device of claim 1, wherein the coordinate control unit further comprises:

at least one gyroscope adapted to provide input information regarding the vertical and horizontal tilt of the control device in order to provide information regarding a desired vertical

and horizontal point of view of the user in the video game.

7. (Original) The control device of claim 1, wherein the coordinate control unit further comprises:

at least one gyroscope adapted to provide information regarding the vertical and horizontal tilt of the control device in order to provide information regarding a desired vertical and horizontal position of a cursor on the display of the computer system.

8. (Previously amended) The control device of claim 1, further including a mouse type of control unit adapted to be operated by the user in order to generate computer mouse type input information, wherein the mouse type control unit comprises:

a rotatable mouse wheel adapted to provide information upon rotation to cause scrolling up or down on the display;

a left mouse button adapted to provide information regarding selections of the user; and

a right mouse button adapted to provide information regarding other selections of the user.

9. (Previously amended) The control device of claim 8, further including:

a trigger extending downward from the central body in front of at least a portion of the handgrip; and

wherein the mouse wheel, the left mouse button and the right mouse button are mounted on a side of the central body of the control device such that positioning a finger of the user proximate to the trigger operates the mouse wheel, left mouse button and right mouse button.

10. (Previously amended) The control device of claim 2, wherein the game play control unit comprises:

a directional controller adapted to generate input information regarding longitudinal and lateral movement in space;

a plurality of buttons adapted to provide information regarding a plurality of actions performed on the display, the plurality of actions including two or more of running, crouching, jumping and special actions; and

a coordinate activation button adapted to selectively enable and disable input of information from the coordinate control unit to the computer system.

11. (Previously amended) The control device of claim 10, wherein the plurality of buttons are positioned on the handgrip of the control device such that the plurality of buttons are operable by fingers of the hand of the user gripping the handgrip.

12. (Previously amended) The control device of claim 11, further comprising:

a foregrip, positioned forward from the handgrip of the weapon, wherein the directional controller is positioned on the foregrip and is operable by a thumb and fingers of a another hand of the user gripping the foregrip.

13. (Original) The control device of claim 11, wherein the directional controller is positioned on the barrel of the control device.

14. (Previously amended) The control device of claim 2, further including a trigger extending downward from the central body in front of at least a portion of the handgrip; and wherein the game play control unit further comprises a shoot button mounted on the trigger of the control device.

15. (Original) The control device of claim 2, further comprising a removable shoulder stock extending behind the central body of the control device and adapted to steady the control device against a shoulder of the user.

16. (Original) The control device of claim 1, further comprising a display unit mounted on the control device to provide additional image information to a user of the control device.

17. (Original) The control device of claim 1, further comprising a feedback unit adapted to provide tactile feedback to a user of the control device.

18. (Currently amended) A method for allowing a user to control a video game display of a computer system, comprising:

providing a video game control device with a housing having a shape adapted to be handled by a user of a video game;

generating within the housing information from a motion sensor which is included within a coordinate control unit portion of the video game control device, said information being that is related to a vertical and a horizontal tilt of the video game control device and is being representative of point of view information of the user in a displayed video game virtual environment;

generating within the housing information from a game play control unit portion of the video game control device, said information being that is representative of at least changes in latitudinal and longitudinal position of the user in the displayed video game virtual environment; and

providing game information for controlling the video game virtual environment display of the computer system based on information generated by the coordinate control unit and providing game information for controlling the video game virtual environment display of the computer system based on information generated by the game play control unit, thereby creating a unified representation of changes of the point of view of the user within the video game virtual environment, which unified representation encompasses both horizontal and vertical changes of the users point of view within the video game virtual environment in response to handling by the user of the control device while not within the video game virtual environment, as well as latitudinal and longitudinal changes of the user's position within the point of view of the video game virtual environment, in response to handling by the user of the game play control unit while not within the video game virtual environment.

19. (Previously amended) The method of claim 18, wherein the control device has a shape substantially similar to a firearm comprising:

a central body;

a handgrip extending downward from a rear section of the central body;

a barrel extending longitudinally forward from the central body; and

a trigger extending downward from the central body in front of the handgrip, and where:
the fingers or thumb of one hand, positioned on one of the handgrip, foregrip or barrel, operate one or more buttons adapted to provide input information regarding longitudinal and lateral position of the user in the displayed video game environment, while the fingers or thumb of the other hand, positioned on a different one of the handgrip, foregrip or barrel, operate one or more buttons adapted to provide input information regarding a plurality of actions performed by the user in the displayed video game environment, the plurality of actions including one or more of running, crouching, jumping and selecting weapons, wherein both hands, in addition to providing the above-noted operation, provide stability to the device with respect to the vertical and horizontal tilt of the control unit, as well as reducing fatigue in wielding the control device in a manner similar to a real firearm.

20. (Previously amended) The method of claim 19, wherein the step of generating information related to the vertical and horizontal tilt of the control device comprises:

generating information regarding a tilt of the barrel relative to a centered vertical position of the control device from a y-axis sensor; and

generating information regarding a tilt of the barrel relative to a centered horizontal position from an x-axis sensor.

21. (Previously amended) The method of claim 20, wherein the step of generating information from the y-axis sensor further comprises:

attaching a horizontal shaft to a side of the barrel that rotates as the barrel is tilted upward and downward;

connecting a first optical disk attached to the horizontal shaft such that the optical disk rotates with the horizontal shaft; and

providing at least one optical encoder adapted to correlate rotation of the optical disk to vertical tilt of the barrel to provide information indicating a desired vertical point of view of a user in the video game.

22. (Previously amended) The method of claim 21, wherein the step of generating information from the x-axis sensor further comprises:

connecting a vertical shaft to the y-axis sensor such that the vertical shaft rotates as the barrel is tilted left and right;

connecting a second optical encoder disk attached to the vertical shaft such that the second optical disk rotates with the vertical shaft; and

providing at least one second optical encoder adapted to correlate the rotation of the second optical disk to a horizontal tilt of the barrel to provide information indicating a desired horizontal point of view of a user in the video game.

23. (Previously amended) The method of claim 18, wherein the step generating information from the coordinate control unit further comprises:

attaching at least one gyroscope to the control device; and

generating information regarding the vertical and horizontal tilt of the control device from the gyroscope in order to provide information regarding the desired vertical and horizontal point of view of a user in the video game.

24. (Previously amended) The method of claim 19, including the further step of providing a mouse control unit with the video game control device for generating mouse control information, wherein the step of generating mouse control information comprises:

generating information related to scrolling up and down on the video game display;

generating information regarding selections of a user from a left mouse button; and

generating information regarding other selections of a user from a right mouse button.

25. (Previously amended) The method of claim 24, wherein the left mouse button and the right mouse button are mounted on a side of the central body of the control device such that positioning a finger of a user proximate to the trigger operates the mouse left mouse button and right mouse button.

26. (Previously amended) The method of claim 19, wherein the step of generating information from a game play control unit comprises:

generating input information regarding longitudinal and lateral movement of a character on the display in space from a direction control unit;

generating information regarding a plurality of actions performed by the character on the display, from a plurality of controls; and

generating activation information from a coordinate activation button to enable input of information from the coordinate control unit.

27. (Previously amended) The method of claim 26, wherein the plurality of controls are positioned on the hand grip of the control device such that at least one of the controls is operable by a thumb of the user gripping the handgrip.

28. (Previously amended) The method of claim 27, wherein the direction control unit is positioned on a fore grip, extending down from the barrel of the control device and is operable by at least one of a thumb and fingers of a second hand of the user gripping the fore grip.

29. (Original) The method of claim 28, wherein the plurality of controls includes a shoot button mounted on the trigger of the control device.

30. (Original) The method of claim 19, wherein the control device further comprises a removable shoulder stock extending behind the central body of the control device and adapted to steady the control device against a shoulder of the user.

31. (Original) The method of claim 18, further comprising receiving additional image information to be displayed to a user via a display unit.

32. (Original) The method of claim 18, further comprising receiving feedback information for providing tactile feedback to a user via a feedback unit.

33. (Currently amended) A control device for operation by a user for controlling a display of a computer system for use with a video game, the control device comprising:

a housing having a shape adapted to be handled by a user of a video game;

a coordinate control unit including a motion sensor included within said housing, said housing being adapted to be handled by the user for generating input information related to a vertical and a horizontal tilt of the control device;

a game play control unit included within said housing adapted to be handled by the user for generating game play input information; and

a controller adapted to process the input information from the coordinate control unit to provide to the computer system point of view information of the user in a video game virtual environment, and adapted to process said input information from the game play control unit to provide to the computer system game play information representative of at least changes in latitudinal and longitudinal position of the user in the video game virtual environment, thereby creating a unified representation of changes of the point of view of the user within the video game virtual environment, which unified representation encompasses both horizontal and vertical changes of the users point of view within the video game virtual environment in response to handling by the user of the control device while not within the video game virtual environment, as well as latitudinal and longitudinal changes of the user's position within the point of view of the video game virtual environment, in response to handling by the user of the game play control unit while not within the video game virtual environment .

34. (Original) The control device of claim 33, wherein the control device is substantially u-shaped comprising:

- a first open end;
- a second open end; and
- a connected end connecting the first open end and the second open end.

35. (Original) The control device of claim 34, wherein the coordinate control unit further comprises:

- a y-axis sensor adapted to input information regarding a tilt of the control device in a vertical direction; and
- an x-axis sensor adapted to input information regarding a tilt of the control device in a horizontal direction.

36. (Original) The control device of claim 35, wherein the y-axis sensor further comprises:

a horizontal shaft attached to a side of the control device that rotates as the control device is tilted upward and downward;

a first optical disk attached to the horizontal shaft such that the optical disk rotates with the horizontal shaft; and

at least one optical encoder adapted to correlate rotation of the optical disk to vertical tilt of the control device to provide information indicating a desired vertical point of view of a user in the video game.

37. (Original) The control device of claim 36, wherein the x-axis sensor further comprises:

a vertical shaft connected to the y-axis sensor such that the vertical shaft rotates as the control device is tilted left and right;

a second optical encoder disk attached to the vertical shaft such that the second optical disk rotates with the vertical shaft; and

at least one second optical encoder adapted to correlate the rotation of the second optical disk to a horizontal tilt of the control device to provide information indicating a desired horizontal point of view of a user in the video game.

38. (Original) The control device of claim 35, wherein the y-axis sensor and the x-axis sensor are positioned in a substantially u-shaped base such that the y-axis sensor detects rotation of a connecting member extending vertically from the base to the control device forward and backward to determine the vertical tilt of the control device and the x-axis sensor detects rotation of the connecting member left and right to determine the horizontal tilt of the control device.

39. (Original) The control device of claim 33, wherein the coordinate control unit further comprises:

at least one gyroscope adapted to provide information regarding the vertical and horizontal tilt of the control device in order to provide information regarding a desired vertical and horizontal point of view of a user in the video game.

40. (Previously amended) The control device of claim 34, further including a mouse control unit adapted to generate computer mouse input information, wherein the mouse control unit comprises:

- a rotatable mouse wheel adapted to provide information upon rotation to cause scrolling up or down on the display;
- a left mouse button adapted to provide information regarding selections of a user; and
- a right mouse button adapted to provide information regarding other selections of a user.

41. (Original) The control device of claim 40, wherein the mouse wheel, the left mouse button and the right mouse button are mounted in a substantially centered position on a top surface of the connected end of the control device.

42. (Original) The control device of claim 40, wherein the mouse wheel, the left mouse button and the right mouse button are mounted in an off centered position on a top center of the connected end of the control device.

43. (Previously amended) The control device of claim 34, wherein the game play control unit comprises:

- a directional controller adapted to input information regarding longitudinal and lateral movement in space positioned on the left side of the top surface of the connected end such that the directional controller is easily manipulated by the left thumb of the user;

- a plurality of buttons adapted to provide information regarding a plurality of actions performed on the display, the plurality of actions including running, crouching, jumping and selecting weapons and positioned on the right side of the top surface of the control device such that the plurality of buttons are easily manipulated by the right thumb of the user; and

- a coordinate activation button adapted to enable input of information from the coordinate control unit while depressed and positioned on a front surface of the connected end of the control device.

44. (Original) The control device of claim 33, further comprising a display unit mounted on the control device to provide additional image information to a user of the control device.

45. (Original) The control device of claim 33, further comprising a feedback unit adapted to provide tactile feedback to a user of the control device.